

CLAIMS

What is claimed is:

1. A method of securing a welding electrode to a welding torch using a collet,
5 comprising:
 disposing the welding electrode through a collet body;
 disposing a collet operable to receive the welding electrode theethrough into the
collet body;
 urging the collet against a first portion of the collet body to compress an end portion
10 of the collet against the welding electrode; and
 urging the collet further into the collet body to dispose the end portion of the collet
into a cylindrical portion of the collet body having a diameter corresponding to the
compressed end portion of the collet to prevent the end portion of the collet from
expanding.
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2. The method as recited in claim 1, disposing the welding electrode through
the collet.
3. The method as recited in claim 1, comprising threading the collet body to
20 the welding torch to secure the collet body to the welding torch.
4. The method as recited in claim 1, wherein urging the collet against a first
portion of the collet body comprises disposing the collet within a backcap and threading the
backcap to the welding torch.
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5. The method as recited in claim 1, wherein urging the collet further into the
collet body comprises further threading the backcap to the welding torch.

6. A collet body adapted to cooperate with a collet to secure a welding electrode to a welding torch, comprising:

a first cylindrical inner portion having a first diameter;

5 a second cylindrical inner portion having a second diameter, the second diameter being less than the first diameter, and

a surface disposed intermediate the first and second cylindrical inner portions,

wherein the surface is configured to compress an end of a collet having an initial outer diameter intermediate the first and second diameters to a final outer diameter less than the second diameter as the collet is disposed against the surface to enable the end of the
10 collet to enter the second cylindrical inner portion.

7. The collet body as recited in claim 6, wherein the second cylindrical inner portion prevents the end of the collet from expanding when the end of the collet is disposed within the second cylindrical inner portion.

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8. The collet body as recited in claim 6, wherein the surface is tapered from the first cylindrical inner portion to the second cylindrical inner portion.

9. The collet body as recited in claim 6, comprising a third cylindrical inner
20 portion having a third diameter less than second diameter.

10. The collet body as recited in claim 6, wherein the second cylindrical inner portion centers the collet within the collet body as the collet is disposed within the collet
25 body.

11. A kit for a welding torch, comprising:

a first collet having an outer diameter and an inner diameter, wherein the inner diameter is configured to compress against a welding electrode having a defined diameter disposed through the first collet; and

5 a collet body securable to the welding torch, the collet body comprising:

a first inner portion configured to compress an end portion of the first collet against the welding electrode as the first collet is urged against the first inner portion; and

10 a cylindrical inner portion having a diameter less than the outer diameter of the first collet, wherein the cylindrical inner portion receives the compressed end portion of the first collet as the first collet is urged further into the collet body and the cylindrical inner portion is configured to prevent the compressed end portion of the first collet from expanding.

12. The system as recited in claim 11, wherein the first collet has a tapered end surface that is configured to compress the end portion of the first collet as the collet is urged against the first inner portion.

13. The system as recited in claim 12, wherein the first inner portion is tapered.

20 14. The system as recited in claim 12, wherein the collet body comprises a second inner portion, the second inner portion being tapered to cooperate with the tapered end surface of the collet to limit travel of the collet relative to the collet body.

25 15. The system as recited in claim 11, comprising a second collet having the outer diameter of the first collet and a second inner diameter greater than the inner diameter of the first collet to enable the second collet to receive a second welding electrode having a second defined diameter greater than the defined diameter of the first collet.

16. The system as recited in claim 11, wherein the first inner portion compresses an end portion of the second collet against the second welding electrode as the second collet is urged against the first inner portion.

5 17. The system as recited in claim 16, wherein the cylindrical inner portion of the collet body receives the compressed end portion of the second collet as the second collet is urged further into the collet body and the cylindrical inner portion is configured to prevent the compressed end portion of the second collet from expanding.

10 18. The system as recited in claim 11, comprising the welding electrode.

19. A welding torch kit, comprising:

a collet body securable to a welding torch body, comprising:

15 a surface extending circumferentially around an interior passageway through the collet body; and
 a cylindrical portion of the passageway,
 wherein the surface is configured to compress a collet into the cylindrical portion as the collet is urged into the collet body.

20 20. The welding torch kit as recited in claim 19, comprising the collet.

21. The welding torch kit as recited in claim 20, comprising a welding electrode disposable through the collet, wherein the surface compresses the collet against the welding electrode as the collet is urged into the cylindrical portion of the collet body.

25 22. The welding torch kit as recited in claim 21, wherein the cylindrical portion prevents the collet from expanding when disposed therein.

23. A method of manufacturing a collet body, comprising:
drilling a stepped drill bit into a solid collet body member to form a collet body
having a passageway comprising a plurality of cylindrical portions of different diameters.

5 24. The method as recited in claim 23, comprising manufacturing a stepped drill
bit to produce the passageway comprising a plurality of cylindrical portions of different
diameters.

10 25. The method as recited in claim 24, wherein manufacturing comprises
configuring the stepped drill bit to produce a cylindrical portion having a specific diameter
to maintain a specific diameter collet compressed against a specific diameter welding
electrode.